GEORGIA INSTITUTE OF TECHNOLOGY — OFFICE OF CONTRACT ADMINISTRATION

PROJECT ADMINISTRATION DATA SHEET

[x] ORIGINAL [ ] REVISION NO. ____

Project No. E-26-687 (continuation of E-26-669) DATE 12/16/81

Project Director: Dr. W. M. Stacey School/Lab ~~XXX~~ Nuclear Eng.

Sponsor: Dept. of Energy, Oak Ridge Operations

Type Agreement: Contract DE-AS05-79-ET52049, Mod A006

Award Period: From 12/1/81 To ~~6/30/82~~ 12/31/82 (Performance) _____ (Reports)

Sponsor Amount: $28,221 Contracted through:

Cost Sharing: None ~~GTRI~~/GIT

Title: Perform Work in Support of the International Workshop on the Next Major Tokamak Experiment.

ADMINISTRATIVE DATA

OCA Contact William F. Brown x4820

1) Sponsor Technical Contact:

Mr. C. R. Head, M/S G-256
Office of Fusion Energy
Dept. of Energy
Washington, DC 20545

2) Sponsor Admin/Contractual Matters:

Ms. Joyce Carringer
Procurement & Contracts Division
Dept. of Energy
Oak Ridge Operations
P. O. Box E
Oak Ridge, TN 37830
(615) 576-7564

Defense Priority Rating: None

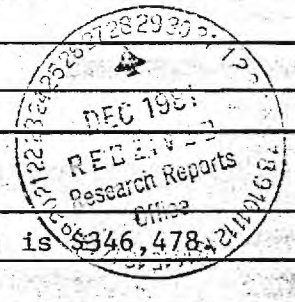
Security Classification: None

RESTRICTIONS

See Attached Gov't Supplemental Information Sheet for Additional Requirements.

Travel: Foreign travel must have prior approval — Contact OCA in each case. Domestic travel requires sponsor approval where total will exceed greater of $500 or 125% of approved proposal budget category.

Equipment: Title vests with none proposed.



COMMENTS:

Mod A006 adds $28,221 and extends contract through 6/30/82.
Revised total value of contract (including prior project numbers) is $346,478.

COPIES TO:

Administrative Coordinator
Research Property Management
Accounting
Procurement/EES Supply Services
Research Security Services
~~Reports Coordinator (OCA)~~
Legal Services (OCA)
Library
EES Public Relations (2)
Computer Input
Project File
Other

FORM OCA 4-78L

GEORGIA INSTITUTE OF TECHNOLOGY OFFICE OF CONTRACT ADMINISTRATION

SPONSORED PROJECT TERMINATION/CLOSEOUT SHEET

Date 3/16/84

Project No. E-26-687 School/~~Lab~~ NE

Includes Subproject No.(s)

Project Director(s) Dr. W. M. Stacey ~~GTRI~~ / GIT

Sponsor Dept. of Energy, Oak Ridge, TN

Title Work in support of the International Workshop on the next Major Tokamak Experiment

Effective Completion Date: 12/31/82 (Performance) 12/31/82 (Reports)

Grant/Contract Closeout Actions Remaining:

- [X] None
- [ ] Final Invoice or Final Fiscal Report
- [ ] Closing Documents
- [ ] Final Report of Inventions
- [ ] Govt. Property Inventory & Related Certificate
- [ ] Classified Material Certificate
- [ ] Other

Continues Project No. E-26-669 Continued by Project No. E-26-612

COPIES TO:

Project Director
Research Administrative Network
Research Property Management
Accounting
Procurement/EES Supply Services
Research Security Services
Reports Coordinator (OCA)
Legal Services

Library
GTRI
Research Communications (2)
Project File
Other

Form OCA 60:1028

E-26-687

Semi-Annual Technical Progress Report
Concerning Quarters 10/1/81 - 2/28/82
and 3/1/82 - 5/31/82

Project E-26-687
Contract DE-AS05-79-ET52049 Mod A006

"Perform Work in Support of International
Workshop on the Next Major Tokamak Experiment"

Weston M. Stacey, Jr.
School of Nuclear Engineering
Georgia Institute of Technology
Atlanta, GA 30332

This contract supported the effort of the principal investigator, W.M. Stacey, Jr., on certain aspects of the INTOR activity. Specifically, the contract supported efforts associated with completion and dissemination of the report of the Phase-1 Workshop. Some effort in support of the Phase 2 INTOR Workshop was also covered, pending an extension and modification to this end.

1. The P.I. attended the IAEA Workshop on Fusion Reactor Design in Tokyo, October 5-16, 1981 to present a paper on INTOR.

2. The P.I. Attended session III (December 7-18, 1981) of the INTOR Workshop in Vienna to plan in detail the Phase 2A Workshop and to proofread the final draft of the Phase 1 Report.

3. The P.I. attended session IV (March 22 - April 3, 1982) of the INTOR Workshop in Vienna to review the work to date and to report to the IFRC.

4. Copies of the Phase-1 INTOR report allocated to the USA were distributed in May 1982.

E-26-687

Annual Technical Progress Report

October 1981 - December 1982

Project E-26-687
Contract DE-AS05-79-ET52049 Mod A006

"Perform Work in Support of International

Workshop on the Next Major Tokamak Experiment

October 1982

Weston M. Stacey, Jr.
School of Nuclear Engineering and Health Physics
Georgia Institute of Technology
Atlanta, Georgia 30332

I. PROGRESS DURING CONTRACT PERIOD

The following tasks were accomplished.

1. The FED-INTOR Activity was organized and managed by the principal investigator, W.M. Stacey, Jr. This activity addressed critical technical issues affecting near-term tokamak reactors: a) plasma performance; b) impurity control physics; c) impurity control engineering; d) tritium; e) engineering testing; f) mechanical configuration; g) magnets and electromagnetics; and h) cost-risk-benefit. Several hundred scientists and engineers in several laboratories, industries and universities were involved. The technical understanding of these critical issues was advanced, conclusions and recommendations for changes in the FED and INTOR design concepts were made based upon these studies, a new design concept was evolved based upon these recommendations, and critical R&D program recommendations were formulated. A report documenting these results was prepared and will be distributed in the near future.

2. Members of the Georgia Institute Technology Fusion Research Program contributed to the technical work performed under the FED-INTOR Activity as follows: W.M. Stacey - cost-risk-benefit and impurity control physics (flow reversal); G.R. Bateman - impurity control physics (bundle divertor); R.B. Bennett - impurity control physics (flow reversal); and B. DeWald - impurity control engineering (sputtering).

3. The principal investigator, W.M. Stacey, Jr., served as the senior US representative and Steering Committee member at the INTOR Workshop sessions held at IAEA headquarters in Vienna 12/7 - 18/81, 3/29 - 4/9/82 and 7/12 - 23/82.

4. The principal investigator represented the US at the IAEA Workshop on Fusion Reactor Design and Technology in Tokyo 10/5 - 16/81. He chaired the 1-week workshop session on near-term tokamak reactors and prepared the workshop report on that topic.

5. The principal investigator prepared and presented papers on INTOR at the IAEA Tokyo Workshop on fusion reactor design (10/81), the ANS/IEEE Chicago conference (10/81), the ANS San Francisco conference (12/81) and the IAEA Baltimore plasma physics conference (9/82).

II. PUBLICATIONS DURING CONTRACT PERIOD

1. W.M. Stacey, Jr., M.A. Abdou, J.A. Schmidt and T.E. Shannon, "US Conceptual Design Contribution to the INTOR Phase 1 Workshop", Nucl. Techn./Fusion, 1 (4), 486 (1981).

2. INTOR Group, "International Tokamak Reactor - Phase 1", Nucl. Fusion, 22 (1), 135 (1982).

3. International Tokamak Reactor - Phase One, IAEA report STI/PUB/619, Vienna (1982).

4. Y. Iso, W.M. Stacey, Jr., G.L. Kulcinski, R.A. Krakowski, G.A. Carlson, C. Yamayaka, G. Casini, N. Igata, "Fusion Reactor Design - III", Nucl. Fusion, 22 (5), 671 (1982).